

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. -3. (cancelled).

4. (currently amended) The ~~linear-actuator~~ injection molding apparatus according to claim ~~[[1]]~~9, further comprising a control unit which receives signals from said position sensor only for one of completely open or completely closed positions of the ~~control~~ valve pin.

5. (currently amended) The ~~linear-actuator~~ injection molding apparatus according to claim 4, wherein said position sensor sends signals to the control unit for intermediate positions of the ~~control~~ valve pin.

6. (currently amended) The ~~linear-actuator~~ injection molding apparatus according to claim ~~[[1]]~~9, wherein said position sensor is an inductive sensor.

7. (cancelled).

8. (currently amended) An injection molding apparatus, comprising:
a hot runner manifold comprising at least one melt channel;
a nozzle fluidly connected to said melt channel of said hot runner manifold;
a valve gate disposed within said nozzle;

a valve pin running through at least a portion of said nozzle to open and close said valve gate; and

~~a mold defining a mold cavity disposed adjacent said valve gate; and~~

a linear actuator connected to said valve pin having a position sensor and a cooling assembly, wherein said position sensor is ~~integrated into~~ disposed within said cooling assembly.

9. (currently amended) An injection molding apparatus, comprising:

a hot runner manifold comprising at least one melt channel;

a nozzle fluidly connected to said melt channel of said hot runner manifold;

a valve gate disposed within said nozzle;

a valve pin running through at least a portion of said nozzle to open and close said valve gate; and

~~a mold defining a mold cavity disposed adjacent said valve gate; and~~

a linear actuator connected to said valve pin having a position sensor and a cooling assembly, wherein said position sensor is ~~position~~ positioned substantially proximal to said cooling assembly.

10. (new) The injection molding apparatus according to claim 8, further comprising a control unit which receives signals from said position sensor only for one of completely open or completely closed positions of the valve pin.

11. (new) The injection molding apparatus according to claim 10, wherein said position sensor sends signals to the control unit for intermediate positions of the valve pin.
12. (new) The injection molding apparatus according to claim 8, wherein said position sensor is an inductive sensor.
13. (new) The injection molding apparatus according to claim 8, wherein said linear actuator includes a piston and cylinder assembly, wherein said valve pin is coupled to said piston for advancing and retracting said valve pin.
14. (new) The injection molding apparatus according to claim 13, wherein said position sensor is disposed adjacent a portion of said piston and measures the position of said piston.
15. (new) The injection molding apparatus of claim 9, wherein said linear actuator includes a piston and cylinder assembly, wherein said valve pin is coupled to said piston for advancing and retracting said valve pin.
16. (new) The injection molding apparatus of claim 15, wherein said position sensor is disposed adjacent a portion of said piston and measures the position of said piston.

17. (new) The injection molding apparatus of claim 15, wherein said piston is coupled to a position indicator and wherein said position sensor senses the position of said piston by measuring the position of said position indicator.

18. (new) The injection molding apparatus of claim 15, wherein said piston is coupled to a first cam and a second cam, wherein said position sensor senses said first cam when said piston is at its retracted-most position, and said position sensor senses said second cam when said piston is at its extended-most position.

19. (new) A linear actuator for a control valve of an injection molding apparatus, comprising:

a piston and cylinder assembly;

a cooling plate having an opening formed therein;

a position sensor disposed within said opening in said cooling plate, wherein said position sensor measures the displacement of said piston within said cylinder.

20. (new): The linear actuator of claim 19, wherein said position sensor is disposed adjacent a portion of said piston and directly measures the position of said piston.

21. (new) A linear actuator for a control valve of an injection molding apparatus, comprising:

a piston and cylinder assembly;

a cooling plate;

a position sensor disposed substantially proximal to said cooling plate, wherein said position sensor measures the displacement of said piston within said cylinder.

22. The linear actuator of claim 21, wherein said position sensor is disposed adjacent a portion of said piston and directly measures the position of said piston.

23. (new) The injection molding apparatus of claim 21, wherein said piston is coupled to a position indicator and wherein said position sensor senses the position of said piston by measuring the position of said position indicator.

24. (new) The injection molding apparatus of claim 21, wherein said piston is coupled to a first cam and a second cam, wherein said position sensor senses said first cam when said piston is at its retracted-most position, and said position sensor senses said second cam when said piston is at its extended-most position.